

# Office of Engineering and Technology

## Report to the Commission



January 15, 2003

## **Mission**

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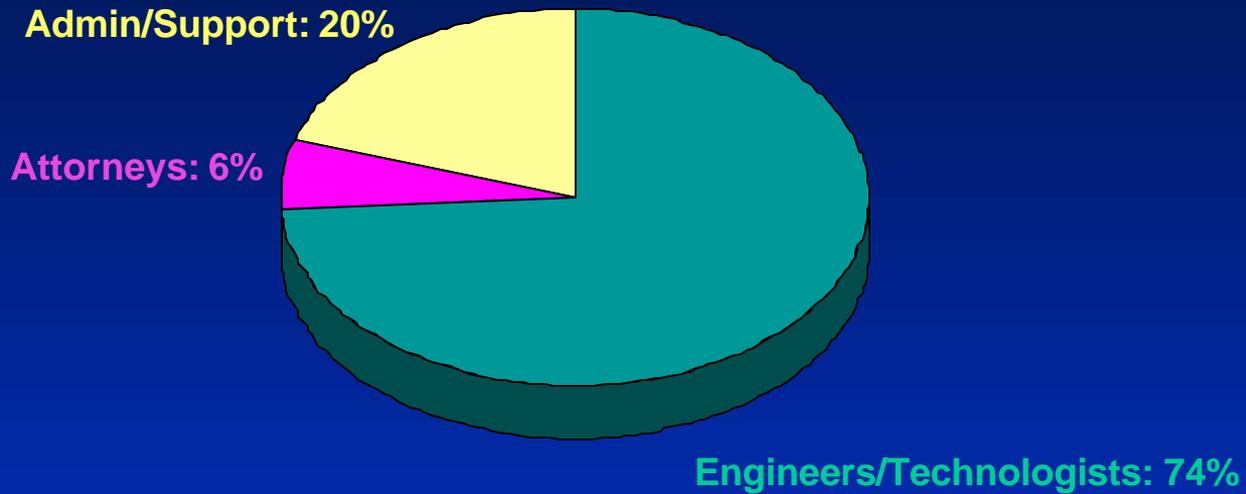
- **Resolve and advise on complex technical issues objectively**
- **Propose policies/rules for the efficient use of the radio spectrum**
- **Provide insight and advice to the Commission concerning technology trends**
- **Enhance technical competence of Commission staff**

# Staffing Profile

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**OET Total Staff = 113**

**Comprised of Predominately Technical Professionals**



# Operations:

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**Washington, D.C.  
Headquarters**



**Columbia, MD  
Laboratory**



**Mobile Measurements**

# 2002 Accomplishments

## **Spectrum Policy Task Force:**

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- **June 2002 – Formation of Task Force**
- **June 2002 – Public Notice**
- **August 2002 – Public Workshops**
  - ⇒ **Unlicensed Devices and Experimental Licenses**
  - ⇒ **Interference Protection**
  - ⇒ **Spectrum Efficiency**
  - ⇒ **Spectrum Rights and Responsibilities**
- **November 2002 – Task Force Report Issued**

## **Spectrum Policy Task Force Principal Findings:**

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- **Spectrum access is a much more significant problem than scarcity**
- **Spectrum can be parceled in space/power, frequency, and time**
- **Technology is allowing systems to be much smarter and more tolerant to interference than in the past**
- **Spectrum rights and responsibilities are not always clearly defined**
- **Migrate to an exclusive and commons models whenever possible, except when there are compelling public interest reasons to use the command-and-control model**

# **Authorization of Ultra Wideband Devices**

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**First Report and Order adopted February 2002**

**Establishes technical standards and operating restrictions for three types of UWB devices based on their potential to cause interference**

- 1. Imaging Systems**
- 2. Vehicular Radar Systems**
- 3. Communication Systems**

# **Ultra wideband Next Steps**

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## **Testing and Measurement Program**

- **Measurement of Ambient Emissions**
- **Measurement of Emissions from Existing Consumer Devices**
- **Measurement of UWB Emissions**

## **Regulatory Proceeding**

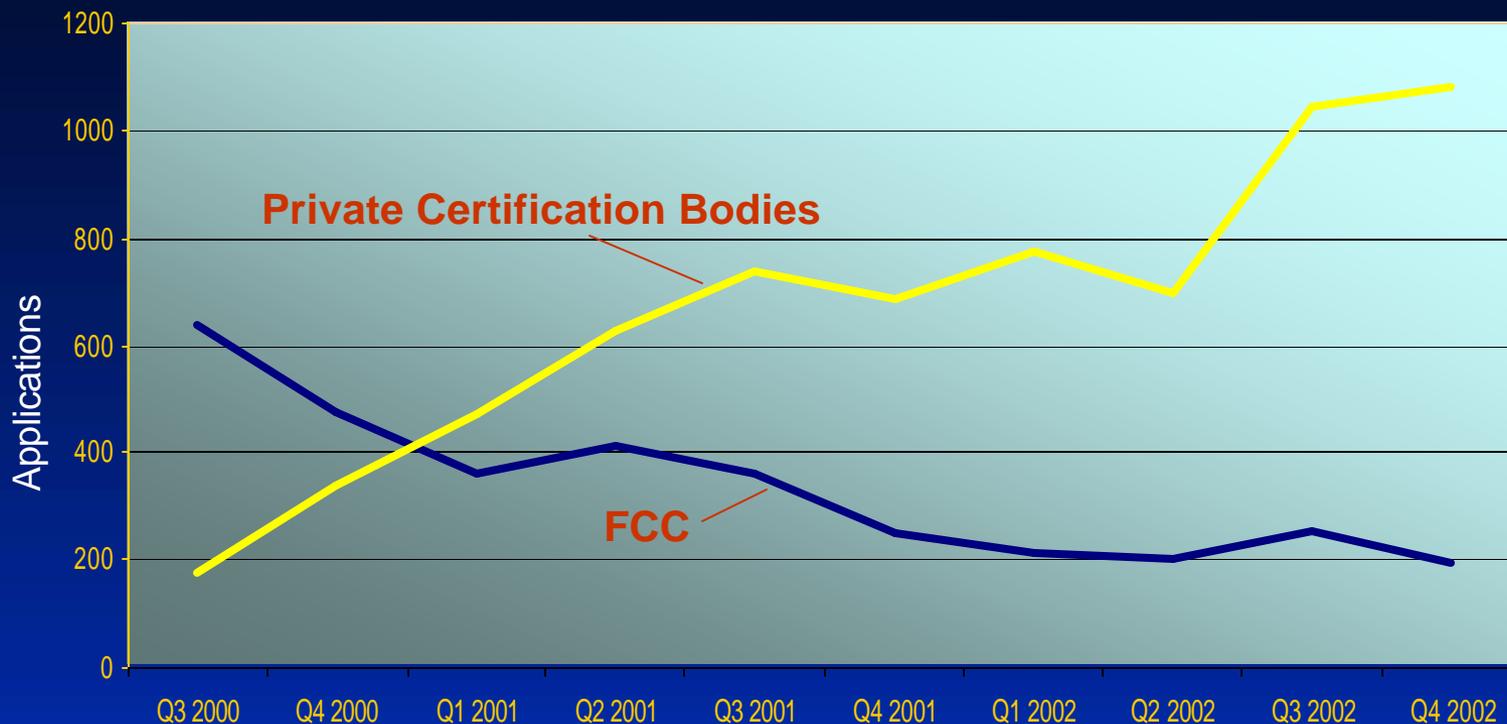
- **Address Petitions for Reconsideration**
- **Proposed Further Commission Action**

## Authorization of Service:

	Equipment Authorization	Experimental Licensing
<b>Applications Received</b>	2002: 1,116 applications	2002: 764 applications
<b>Applications Pending</b>	2001: 204 applications 2002: 104 applications	2001: 271 applications 2002: 118 applications
<b>Speed of Disposal</b>	36 Day Average 90% in 68 days Goal is 90% in 90 days	55 Day Average 90% in 58 days Goal is 90% in 90 days
<b>Electronic Filing</b>	100% since 10/99	57% in 2001 88% in 2002

**OET Equipment Authorization Electronic Filing System honored as recipient of the prestigious 2002 E-Gov Pioneer Award.**

# Equipment Authorization Application Trend



Private Certification Bodies: Routine testing

FCC Lab: Resources directed to technically complex certification and support of Commission items

## **Technical Excellence:**

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- **Excellence in Engineering Program**
  - ⇒ 12 Tutorials attended by almost 700 employees
  - ⇒ 5 Professional Seminars attended by over 350 employees
  - ⇒ Almost 100 individual courses taken
  
- **New Initiatives**
  - ⇒ Masters Program
  - ⇒ Web-Based courses
  
- **Recruited New Engineering Talent**

# Accomplishments:

2002 Accomplishments	Spectrum	Broadband	Media/ DTV	Homeland Security	Competition
Spectrum Policy Task Force Report	✓	✓	✓	✓	✓
Authorization of UWB Devices	✓	✓		✓	✓
UWB Emissions Analysis	✓	✓		✓	✓
698-746 MHz (Ch. 52-59) Allocation	✓		✓		✓
Advanced Wireless Services Allocation	✓	✓			✓
MVDDS/Northpoint Allocation	✓	✓	✓		✓
Increased Flexibility for Spread Spectrum Rules	✓	✓			✓
70, 80, 90 GHz Allocation	✓	✓			✓
Authorization of Digital Broadcast Auxiliary Service Order	✓		✓		

# Accomplishments:

2002 Accomplishments (cont)	Spectrum	Broadband	Media/ DTV	Homeland Security	Competition
Technical Support for Proceedings	✓	✓	✓	✓	✓
800 MHz Receiver Susceptibility Analysis	✓			✓	
WCS/DARS interference Analysis	✓		✓		✓
Propagation Modeling	✓	✓	✓	✓	✓
IP Telephony Analysis		✓	✓		
Internet Security Analysis		✓		✓	
DSL/Cable Modem Analysis		✓			
CALEA Remand	✓			✓	
DTV Tuner Requirements Order	✓		✓		
Modification of Canadian DTV plan to enable spectrum for public safety	✓		✓	✓	

# Accomplishments:

2002 Accomplishments (cont)	Spectrum	Broadband	Media/ DTV	Homeland Security	Competition
Revision of Part 15 Rules to address interference from Radar Detectors	✓			✓	
Technical Excellence	✓	✓	✓	✓	✓
RF Safety Consumer Information	✓	✓		✓	
Technical Advisory Committee Support	✓	✓	✓	✓	✓
Network Reliability and Interoperability Council Recharter and Support	✓	✓	✓	✓	✓
Best Practices Formulation		✓	✓	✓	✓
DTV Application Technical Processing	✓		✓		
Backlog Reduction	✓	✓			✓
APEC Mutual Recognition Agreement	✓				✓
Equipment Auth Streamlining	✓	✓			✓

# 2003 Goals

## **Power Line Carrier Technology**

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- **Possible new option for broadband to the home (“last mile”)**
- **Examine potential rule changes to facilitate deployment**
- **Protect incumbent spectrum users from spurious emissions**
- **Establish rules and test procedures**

## **Cognitive Radios**

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- **Functions previously performed in hardware, such as, generation of transmitted radio signal, are performed in software**
- **Can be programmed to operate on or with any frequency, any bandwidth, any modulation or transmission format**
- **May require additional rule changes to facilitate deployment**
- **Potential to deliver public benefits with regard to spectrum efficiency, detection capability, and interoperability**

# Goals:

2003 Goals	Spectrum	Broadband	Media/ DTV	Homeland Security	Competition
Interference Temperature Studies	✓	✓	✓	✓	✓
Receiver Standards	✓	✓	✓	✓	✓
Cognitive Radio Applications	✓	✓	✓	✓	✓
800 MHz Receiver Immunity Study	✓			✓	
Spectrum Sharing/Interference Studies	✓	✓	✓	✓	✓
2 GHz (MSS) Reallocation	✓	✓			✓
MDS Relocation	✓	✓			✓
Additional Spectrum for Unlicensed Operations	✓	✓			
Web-Based Table of Allocations	✓	✓	✓	✓	

# Goals:

2003 Goals (cont)	Spectrum	Broadband	Media/ DTV	Homeland Security	Competition
Power Line Carrier Technology	✓	✓			✓
Ultra Wideband Laboratory Study	✓	✓		✓	✓
Leadership of ITU-R Task Group (UWB)	✓	✓		✓	✓
Reconsideration of UWB Rules	✓	✓		✓	✓
Radio Propagation Modeling Improvements	✓	✓	✓	✓	✓
Digital Rights Management Initiative		✓	✓		✓
Network Robustness Analyses		✓		✓	
SS7 Reliability Analyses		✓		✓	
Outage Reporting Evaluation				✓	

# Goals:

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2003 Goals (cont)	Spectrum	Broadband	Media/ DTV	Homeland Security	Competition
Softswitch Technology Analyses		✓		✓	✓
Mesh Networks Analyses	✓	✓		✓	✓
Technical Advisory Council Recharter and Support	✓	✓	✓	✓	✓
Network Reliability and Interoperability Council Support	✓	✓	✓	✓	✓
NRIC Best Practices Implementation		✓		✓	
MSRIC and NRIC Outreach/Education		✓		✓	

